CLAIMS

1. System for spatial analysis of a physical quantity whose spatial values (S1 to Sn) are respectively represented by measurement pulses (I1 to In) whose order in time is representative of those values, this system comprising a plurality of processing units (U1 to Un; p_n) for processing said measurement pulses, said processing units being arranged in one or more rows and each having an output (SOR1 to SORn) at which, during successive processing cycles, a measurement pulse that is processed therein may be delivered to form the output signal (SU) of said system,

characterized in that each of said processing units (U1 to Un; p_n) further includes inhibition means (BI; 5; 25) for inhibiting, in other units of said row and during a processing cycle, the passage toward the outputs (SOR1 to SORn; 6; 42) of those other units of respective measurement pulses that are processed therein, and thereby preventing them from forming said output signal (SU) of the system, if those measurement pulses are ordered later in the processing cycle concerned than the pulse processed in the unit concerned.

2. System according to claim 1, characterized in that it further comprises means (N) for counting the measurement pulses delivered at the output (SU) of said system over a plurality of successive processing cycles and for interrupting (INT1 to INTn) the processing of said measurement pulses if the number of pulses delivered in this way reaches a predetermined value.

3. System according to either claim 1 or claim 2, characterized in that said spatial values (S1 to Sn) representing said physical quantity are instantaneous amplitudes thereof measured locally during respective successive processing cycles, and in that each of said units (U1 to Un; p_n) further comprises conversion means (C1 to Cn; 3, 4; 21, 23, 24) for converting said amplitudes into measurement pulses (I1 to In) ordered in time.

4. System according to claim 3, characterized in that said conversion means include control means (4) that bring about the passage to the output (6) of said measurement pulse in the processing unit of said row in which the order in time of that measurement pulse is the earliest in said cycle concerned and therefore represents the maximum value of the values of the physical quantity detected by the respective processing units (p_n) during a processing cycle.

5. System according to claim 3, characterized in that said conversion means include control means (3, 4; 23, 24) that bring about the passage to the output of said measurement pulse in the processing unit in said row in which that pulse is the latest in said cycle concerned and therefore represents the minimum value of all the values

of the physical quantity detected by the respective processing units (p_n) during a processing cycle.

6. System according to either claim 4 or claim 5, characterized in that said control means include a comparator (3; 23) to which is applied, on the one hand, the amplitude appearing in the processing unit (U1 to Un; p_n) concerned during a processing cycle and, on the other hand, a generator of a reference signal (4; 24) variable in accordance with a profile repeated during each processing cycle; said comparator being adapted to supply an inhibition signal to said adjacent units if said reference signal becomes equal to said amplitude during a processing cycle.

7. System according to claim 4 in conjunction with claim 6, characterized in that said reference signal generator (4; 24) is adapted to generate a monotonously increasing reference signal and said measurement pulse corresponds to the lowest spatial value of said physical quantity during a processing cycle.

8. System according to claim 5 in conjunction with claim 6, characterized in that said reference signal generator (4; 24) reference signal is adapted to generate a monotonously decreasing reference signal and said measurement pulse corresponds to the highest spatial value of said physical quantity during a processing cycle.

9. System according to any one of the preceding claims, characterized in that it includes a plurality of rows of processing units (p_n) forming a matrix, said units being arranged in rows and in columns, and in that each processing unit further comprises selection means (31 to 34b) for bringing about the selective inhibition of the passage toward the output of respective measurement pulses in the units adjacent the processing unit concerned, oriented in the direction of a column, a row or a diagonal of said matrix.

10. System according to claim 9, characterized in that each of said processing units (p_n) comprises a turning filter circuit (21) to which said amplitude is applied to form a vectorial signal whose norm is represented by the order of said measurement pulse and whose phase represents the orientation of the spatial variation of said physical quantity, said selection means further comprising means for comparing the phase of said vectorial signal to the order in time of said pulse and for authorizing, as a function of the phase position of said measurement pulse, the inhibition of the processing units selectively situated in a column, a row or a diagonal of said matrix.

11. System according to claim 10, characterized in that said selection means further comprise means (27) for selectively authorizing the passage to said output of the processing unit concerned of the measurement pulse that is processed therein or of the phase information of that pulse.

12. System according to any one of claims 1 to 11, characterized in that each processing unit is connected to an element (1; 20) responsive to said physical quantity and supplying an analog signal representative of the local evolution thereof and forming said amplitudes during said successive processing cycles.

13. System according to claim 12, characterized in that said physical quantity is the luminance emanating from a scene observed by said system and in that said sensitive element is a photosensor (1; 20) forming part of each of said processing units (p_n).